Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims

1. (cancelled)

2. (currently amended) A movement decision method for capturing sub-pixel motion image suitable for super-resolution processing ~~according to Claim 1~~ wherein:

while an image capturing object is moved along a predetermined one-dimensional moving direction, a sequential image of said image capturing object is captured by a fixed image capturing device,

said sequential image is set to a two-dimensional sub-pixel motion image suitable for super-resolution processing,

and said one-dimensional moving direction of said image capturing object in a coordinate system normalized by aspect ratio of pixel of an image capturing element within said image capturing device is determined to p/q of a rational number,

wherein:

one pixel of vertical direction of said coordinate system is divided by an integer p, and one pixel of horizontal direction of said coordinate system is divided by an integer q, and

wherein absolute value of said integer p and absolute value of said integer q are integers which ~~is not a small integer~~ are greater than or equal to 2650.

3. (currently amended) A movement decision method for capturing sub-pixel motion image suitable for super-resolution processing ~~according to Claim 1~~, wherein:

while an image capturing object is moved along a predetermined one-dimensional moving direction, a sequential image of said image capturing object is captured by a fixed image capturing device,

said sequential image is set to a two-dimensional sub-pixel motion image suitable for super-resolution processing,

and said one-dimensional moving direction of said image capturing object in a

coordinate system normalized by aspect ratio of pixel of an image capturing element within said image capturing device is determined to p/q of a rational number,

wherein:

one pixel of vertical direction of said coordinate system is divided by an integer p, and one pixel of horizontal direction of said coordinate system is divided by an integer q, and

wherein a moving direction for setting value of an evaluation function Cover(Lact) to be smaller than 1 is set to said one-dimensional moving direction of said image capturing object when magnification of said super-resolution processing is fixed and known.

4. (currently amended) A movement decision method for capturing sub-pixel motion image suitable for super-resolution processing according ~~to Claim 1,~~ wherein:

while an image capturing object is moved along a predetermined one-dimensional moving direction, a sequential image of said image capturing object is captured by a fixed image capturing device,

said sequential image is set to a two-dimensional sub-pixel motion image suitable for super-resolution processing,

and said one-dimensional moving direction of said image capturing object in a coordinate system normalized by aspect ratio of pixel of an image capturing element within said image capturing device is determined to p/q of a rational number,

wherein:

one pixel of vertical direction of said coordinate system is divided by an integer p, and one pixel of horizontal direction of said coordinate system is divided by an integer q, and

wherein a moving direction for setting value of an evaluation function SCover(LM) to be smaller than 1 is set to said one-dimensional moving direction of said image capturing object.

5. (cancelled)

6. (cancelled)

7. (previously presented) An image capturing device which captures a two-dimensional sub-

pixel motion image suitable for super-resolution processing,

said image capturing device comprises:

a driving mechanism which one-dimensionally drives an image capturing element within said image capturing device along an image capturing element moving direction,

wherein:

~~said one-dimensional moving direction of said image capturing object determined by the method according to Claim 2 is set to said image capturing element moving direction,~~

said image capturing element moving direction in a coordinate system normalized by aspect ratio of pixel of said image capturing element is determined to p/q of a rational number,

one pixel of vertical direction of said coordinate system is divided by an integer p, and one pixel of horizontal direction of said coordinate system is divided by an integer q,

absolute value of said integer p and absolute value of said integer q are integers equal to or greater than 2650,

wherein:

a sequential image of a fixed image capturing object is captured while said image capturing element is moved by said driving mechanism along said image capturing element moving direction,

and said sequential image is set to said two-dimensional sub-pixel motion image.

8. (currently amended) An image capturing device which captures a two-dimensional sub-pixel motion image suitable for super-resolution processing,

said image capturing device comprises:

a driving mechanism which one-dimensionally drives an image capturing element within said image capturing device along an image capturing element moving direction,

wherein:

~~said one-dimensional moving direction of said image capturing object determined by the method according to Claim 3 is set to said image capturing element moving direction,~~

said image capturing element moving direction in a coordinate system normalized by aspect ratio of pixel of said image capturing element is determined to p/q of a rational number,

one pixel of vertical direction of said coordinate system is divided by an integer p, and one

pixel of horizontal direction of said coordinate system is divided by an integer q,

a moving direction for setting value of an evaluation function Cover(Lact) to be smaller than 1 is set to said image capturing element moving direction when magnification of said super-resolution processing is fixed and known,

wherein:

a sequential image of a fixed image capturing object is captured while said image capturing element is moved by said driving mechanism along said image capturing element moving direction,

and said sequential image is set to said two-dimensional sub-pixel motion image.

9. (currently amended) An image capturing device which captures a two-dimensional sub-pixel motion image suitable for super-resolution processing,

said image capturing device comprises:

a driving mechanism which one-dimensionally drives an image capturing element within said image capturing device along an image capturing element moving direction,

wherein:

~~said one-dimensional moving direction of said image capturing object determined by the method according to Claim 4 is set to said image capturing element moving direction,~~

said image capturing element moving direction in a coordinate system normalized by aspect ratio of pixel of said image capturing element is determined to p/q of a rational number,

one pixel of vertical direction of said coordinate system is divided by an integer p, and one pixel of horizontal direction of said coordinate system is divided by an integer q,

a moving direction for setting value of an evaluation function SCover(LM) to be smaller than 1 is set to said image capturing element moving direction,

wherein:

a sequential image of a fixed image capturing object is captured while said image capturing element is moved by said driving mechanism along said image capturing element moving direction,

and said sequential image is set to said two-dimensional sub-pixel motion image.

10. (previously presented) An image capturing device which captures a two-dimensional sub-pixel motion image suitable for super-resolution processing,

said image capturing device arranging a member for optically moving image in a predetermined direction between a lens and an image capturing element,

wherein:

~~said one-dimensional moving direction of said image capturing object determined by the method according to Claim 2 is set to said predetermined direction,~~

said predetermined direction in a coordinate system normalized by aspect ratio of pixel of said image capturing element is determined to p/q of a rational number,

one pixel of vertical direction of said coordinate system is divided by an integer p, and one pixel of horizontal direction of said coordinate system is divided by an integer q,

absolute value of said integer p and absolute value of said integer q are integers equal to or greater than 2650,

wherein:

a sequential image of a fixed image capturing object is captured,

and said sequential image is set to said two-dimensional sub-pixel motion image.

11. (currently amended) An image capturing device which captures a two-dimensional sub-pixel motion image suitable for super-resolution processing,

said image capturing device arranging a member for optically moving image in a predetermined direction between a lens and an image capturing element,

wherein:

~~said one-dimensional moving direction of said image capturing object determined by the method according to Claim 3 is set to said predetermined direction,~~

said predetermined direction in a coordinate system normalized by aspect ratio of pixel of said image capturing element is determined to p/q of a rational number,

one pixel of vertical direction of said coordinate system is divided by an integer p, and one pixel of horizontal direction of said coordinate system is divided by an integer q,

a moving direction for setting value of an evaluation function Cover(Lact) to be smaller than 1 is set to said predetermined direction when magnification of said super-resolution

processing is fixed and known,

wherein:

a sequential image of a fixed image capturing object is captured,

and said sequential image is set to said two-dimensional sub-pixel motion image.

12. (currently amended) An image capturing device which captures a two-dimensional sub-pixel motion image suitable for super-resolution processing,

said image capturing device arranging a member for optically moving image in a predetermined direction between a lens and an image capturing element,

wherein:

~~said one-dimensional moving direction of said image capturing object determined by the method according to Claim 4 is set to said predetermined direction,~~

said predetermined direction in a coordinate system normalized by aspect ratio of pixel of said image capturing element is determined to p/q of a rational number,

one pixel of vertical direction of said coordinate system is divided by an integer p, and one pixel of horizontal direction of said coordinate system is divided by an integer q,

a moving direction for setting value of an evaluation function SCover(LM) to be smaller than 1 is set to said predetermined direction,

wherein:

a sequential image of a fixed image capturing object is captured,

and said sequential image is set to said two-dimensional sub-pixel motion image.

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